**The <form> Element**

HTML forms are used to collect user input.

The <form> element defines an HTML form:

Example

<form>  
.  
*form elements*  
.  
</form>

**HTML forms contain form elements.**

Form elements are different types of input elements, checkboxes, radio buttons, submit buttons, and more.

**The <input> Element**

The <input> element is the most important form element.

The <input> element has many variations, depending on the type attribute.

Here are the types used in this chapter:

|  |  |
| --- | --- |
| **Type** | **Description** |
| text | Defines normal text input |
| radio | Defines radio button input (for selecting one of many choices) |
| submit | Defines a submit button (for submitting the form) |

**Text Input**

<input type="text"> defines a one-line input field for text input:

**LAB 9**

1. **Type the following in an HTML document.**

<form>  
First name:<br>  
<input type="text" name="firstname">  
<br>  
Last name:<br>  
<input type="text" name="lastname">  
</form>

1. **Save and View**
2. **Should look like the following below**

**This is how it will look like in a browser:**

First name:  
  
Last name:  


**Note:** The form itself is not visible. Also note that the ***default*** width of a text field is 20 characters.

**Radio Button Input**

**<input type="radio">** defines a **radio button**.

Radio buttons let a user select ONE of a limited number of choices:

**LAB 9B**

1. **Type the following in an HTML document.**

<form>  
<input type="radio" name="sex" value="male" checked>Male  
<br>  
<input type="radio" name="sex" value="female">Female  
</form>

1. **Save and View**
2. **Should look like the following below**

**This is how the HTML code above will be displayed in a browser:**

Male   
Female

**The Submit Button**

<input type="submit"> defines a button for submitting a form to a form-handler.

The form-handler is typically a server page with a script for processing input data.

The form-handler is specified in the form's action attribute:

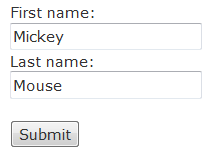
**LAB 9C**

1. **Type the following in an HTML document.**

<form action="action\_page.php">  
First name:<br>  
<input type="text" name="firstname" value="Mickey">  
<br>  
Last name:<br>  
<input type="text" name="lastname" value="Mouse">  
<br><br>  
<input type="submit" value="Submit">  
</form>

1. **Save and View**
2. **Should look like the following below**

**This is how the HTML code above will be displayed in a browser:**

Top of Form

Bottom of Form

**Top of Form**

**Bottom of Form**

**The Action Attribute**

The action attribute defines the action to be performed when the form is submitted.

The common way to submit a form to a server, is by using a submit button.

Normally, the form is submitted to a web page on a web server.

In the example above, a server-side script is specified to handle the submitted form:

<form action="action\_page.php">

If the action attribute is omitted, the action is set to the current page.

**The Method Attribute**

The method attribute specifies the HTTP method (GET or POST) to be used when submitting the forms:

<form action="action\_page.php" method="GET">

or:

<form action="action\_page.php" method="POST">

When to Use GET?

**You can use GET (the default method):**

If the form submission is passive (like a search engine query), and without sensitive information.

When you use GET, the form data will be visible in the page address:

action\_page.php?firstname=Mickey&lastname=Mouse

GET is best suited to short amounts of data. Size limitations are set in your browser

**When to Use POST?**

You should use POST:

If the form is updating data, or includes sensitive information (password).

POST offers better security because the submitted data is not visible in the page address.

**The Name Attribute**

To be submitted correctly, each input field must have a name attribute.

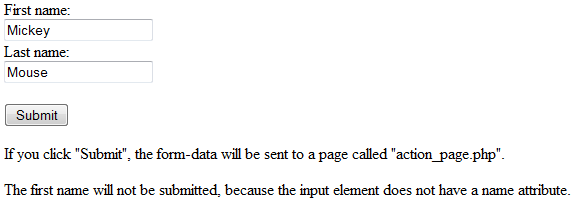
This example will only submit the "Last name" input field:

**LAB 9D**

1. **Type the following code below in an HTML document.**

<form action="action\_page.php">  
First name:<br>  
<input type="text" value="Mickey">  
<br>  
Last name:<br>  
<input type="text" name="lastname" value="Mouse">  
<br><br>  
<input type="submit" value="Submit">  
</form>

1. **Save and View**
2. **Should look like the following below**

**Here is what it looks like!**  


**Grouping Form Data with <fieldset>**

The <fieldset> element groups related data in a form.

The <legend> element defines a caption for the <fieldset> element.

**LAB 9E**

1. **Type the following code below**

<form action="action\_page.php">  
<fieldset>  
<legend>Personal information:</legend>  
First name:<br>  
<input type="text" name="firstname" value="Mickey">  
<br>  
Last name:<br>  
<input type="text" name="lastname" value="Mouse">  
<br><br>  
<input type="submit" value="Submit"></fieldset>  
</form>

1. **Save and View**
2. **Should look like the following below**

This is how the HTML code above will be displayed in a browser:



Top of Form

Bottom of Form

Top of Form

Bottom of Form

**HTML Form Attributes**

An HTML <form> element, with all possible attributes set, will look like this:

**Example**

<form action="action\_page.php" method="GET" target="\_blank" accept-charset="UTF-8"  
enctype="application/x-www-form-urlencoded" autocomplete="off" novalidate>  
.  
*form elements*  
.  
</form>

Here is the list of <form> attributes:

|  |  |
| --- | --- |
| **Attribute** | **Description** |
| accept-charset | Specifies the charset used in the submitted form (default: the page charset). |
| action | Specifies an address (url) where to submit the form (default: the submitting page). |
| autocomplete | Specifies if the browser should autocomplete the form (default: on). |
| enctype | Specifies the encoding of the submitted data (default: is url-encoded). |
| method | Specifies the HTTP method used when submitting the form (default: GET). |
| name | Specifies a name used to identify the form (for DOM usage: document.forms.name). |
| novalidate | Specifies that the browser should not validate the form. |
| target | Specifies the target of the address in the action attribute (default: \_self). |

**HTML Form Elements**

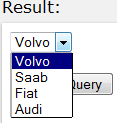
**The <input> Element**

The most important form element is the **<input>** element.

The <input> element can vary in many ways, depending on the **type** attribute.

**The <select> Element (Drop-Down List)**

The **<select>** element defines a **drop-down** list:

**LAB 9F**

1. **Type the following in an HTML document.**

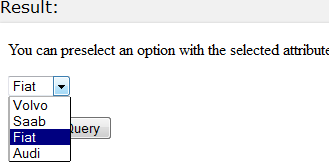
<select name="cars">  
<option value="volvo">Volvo</option>   
<option value="saab">Saab</option>  
<option value="fiat">Fiat</option>  
<option value="audi">Audi</option>  
</select>

1. **Save and View**
2. **Should look like the following below**

The **<option>** elements define the options to select.

The list will normally show the first item as selected.

You can add a selected attribute to define a predefined option.

**Example**

<option value="fiat" selected>Fiat</option>

**The <textarea> Element**

The **<textarea>** element defines a multi-line input field (**a text area**):

**Lab 9G**

1. Type the following in an HTML Document

<textarea name="message" rows="10" cols="30">  
The cat was playing in the garden.  
</textarea>

1. **Save and View**
2. **Should look like the following below**

This is how the HTML code above will be displayed in a browser:



**The <button> Element**

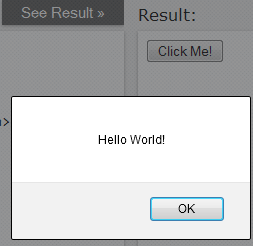
The **<button>** element defines a clickable **button**:

**Lab 9 H**

1. **Type the following in an HTML document**

<button type="button" onclick="alert('Hello World!')">Click Me!</button>

1. **Save and View**
2. **Should look like the following below**



This is how the HTML code above will be displayed in a browser:

**HTML Form Elements**

|  |  |
| --- | --- |
| **Tag** | **Description** |
| **<form>** | Defines an HTML form for user input |
| **<input>** | Defines an input control |
| **<textarea>** | Defines a multiline input control (text area) |
| **<label>** | Defines a label for an <input> element |
| **<fieldset>** | Groups related elements in a form |
| **<legend>** | Defines a caption for a <fieldset> element |
| **<select>** | Defines a drop-down list |
| **<optgroup>** | Defines a group of related options in a drop-down list |
| **<option>** | Defines an option in a drop-down list |
| **<button>** | Defines a clickable button |

**HTML Input Types**

**Input Types**

This part of the lab describes the input types of the <input> element.

**Input Type: text**

**<input type="text">** defines a one-line input field for **text input**:

**Lab 9I**

1. **Type the following in an HTML Document**

<form>  
First name:<br>  
<input type="text" name="firstname">  
<br>  
Last name:<br>  
<input type="text" name="lastname">  
</form>

1. **Save and View**
2. **Should look like the following below**

This is how the HTML code above will be displayed in a browser:

First name:  
  
Last name:  


**Input Type: password**

**<input type="password">** defines a **password field**:

**Lab 9J**

1. **Type the following in an HTML document**

<form>  
User name:<br>  
<input type="text" name="username">  
<br>  
User password:<br>  
<input type="password" name="psw">  
</form>

1. **Save and View**
2. **Should look like the following below**

This is how the HTML code above will be displayed in a browser:

User name:  
  
User password:  


|  |  |
| --- | --- |
|  | The characters in a password field are masked (shown as asterisks or circles). |

**Input Type: submit**

<input type="submit"> defines a button for submitting form input to a form-handler.

The form-handler is typically a server page with a script for processing input data.

The form-handler is specified in the form's action attribute:

**Lab 9K**

1. **Type the following in an HTML document**

<form action="action\_page.php">  
First name:<br>  
<input type="text" name="firstname" value="Mickey">  
<br>  
Last name:<br>  
<input type="text" name="lastname" value="Mouse">  
<br><br>  
<input type="submit" value="Submit">  
</form>

1. **Save and View**
2. **Should look like the following below**

This is how the HTML code above will be displayed in a browser:

Top of Form

First name:  
  
Last name:  
Bottom of Form

Top of Form

Bottom of Form

If you omit the submit button's value attribute, the button will get a default text:

**Lab 9L**

<form action="action\_page.php">  
First name:<br>  
<input type="text" name="firstname" value="Mickey">  
<br>  
Last name:<br>  
<input type="text" name="lastname" value="Mouse">  
<br><br>  
<input type="submit">  
</form>

**Input Type: radio**

<input type="radio"> defines a radio button.

Radio buttons let a user select ONLY ONE of a limited number of choices:

**Lab 9M**

1. **Type the following in an HTML document**

<form>  
<input type="radio" name="sex" value="male" checked>Male  
<br>  
<input type="radio" name="sex" value="female">Female  
</form>

1. **Save and View**
2. **Should look like the following below**

This is how the HTML code above will be displayed in a browser:

Male   
Female

**Input Type: checkbox**

<input type="checkbox"> defines a checkbox.

Checkboxes let a user select ZERO or MORE options of a limited number of choices.

**Lab 9N**

1. **Type the following in an HTML document Save and View**

<form>  
<input type="checkbox" name="vehicle" value="Bike">I have a bike  
<br>  
<input type="checkbox" name="vehicle" value="Car">I have a car   
</form>

This is how the HTML code above will be displayed in a browser:

I have a bike   
I have a car

**Input Type: button**

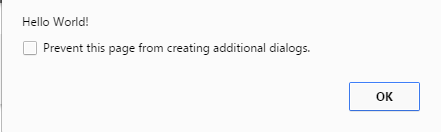
**<input type="button">** defines a **button**:

**Lab 9O**

1. **Type the following in an HTML document Save and View**

<input type="button" onclick="alert('Hello World!')" value="Click Me!">

This is how the HTML code above will be displayed in a browser:

****

**Input Type: number**

The **<input type="number">** is used for input fields that should contain a numeric value.

You can set restrictions on the numbers.

Depending on browser support, the restrictions can apply to the input field.

**Lab 9P**

1. **Type the following in an HTML document Save and View**

<form>  
  Quantity (between 1 and 5):  
  <input type="number" name="quantity" min="1" max="5">  
</form>

**The HTML View will look like the following**:

****

**Input Restrictions**

Here is a list of some common input restrictions (some are new in HTML5):

|  |  |
| --- | --- |
| **Attribute** | **Description** |
| disabled | Specifies that an input field should be disabled |
| max | Specifies the maximum value for an input field |
| maxlength | Specifies the maximum number of character for an input field |
| min | Specifies the minimum value for an input field |
| pattern | Specifies a regular expression to check the input value against |
| readonly | Specifies that an input field is read only (cannot be changed) |
| required | Specifies that an input field is required (must be filled out) |
| size | Specifies the width (in characters) of an input field |
| step | Specifies the legal number intervals for an input field |
| value | Specifies the default value for an input field |

**Lab 9Q**

1. **Type the following in an HTML document Save and View**

<form>  
  Quantity:  
  <input type="number" name="points" min="0" max="100" step="10" value="30">  
</form>

**Input Type: date**

The **<input type="date">** is used for input fields that should contain a date.

Depending on browser support, a date picker can show up in the input field.

**Lab 9R**

1. **Type the following in an HTML document Save and View**

<form>  
  Birthday:  
  <input type="date" name="bday">  
</form>

HTML View Below



**Lab 9S**

You can add restrictions to the input:

1. **Type the following in an HTML document Save and View**

<form>  
  Enter a date before 1980-01-01:  
  <input type="date" name="bday" max="1979-12-31"><br>  
  Enter a date after 2000-01-01:  
  <input type="date" name="bday" min="2000-01-02"><br>  
</form>

**Input Type: color**

The **<input type="color">** is used for input fields that should contain a color.

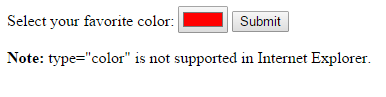
Depending on browser support, a color picker can show up in the input field.

**Lab 9T**

1. **Type the following in an HTML document Save and View**

<form>  
  Select your favorite color:  
  <input type="color" name="favcolor">  
</form>

The HTML View Below:



**Input Type: range**

The **<input type="range">** is used for input fields that should contain a value within a range.

Depending on browser support, the input field can be displayed as a slider control.

**Lab 9U**

<form>  
  <input type="range" name="points" min="0" max="10">  
</form>

HTML VIEW below:



You can use the following attributes to specify restrictions: min, max, step, value.

**Input Type: month**

The **<input type="month">** allows the user to select a month and year.

Depending on browser support, a date picker can show up in the input field.

**Lab 9V**

<form>  
  Birthday (month and year):  
  <input type="month" name="bdaymonth">  
</form>

The HTML View is below

****

**Input Type: week**

The **<input type="week">** allows the user to select a week and year.

Depending on browser support, a date picker can show up in the input field.

**Lab 9W**

<form>  
  Select a week:  
  <input type="week" name="week\_year">  
</form>

**The HTML View is below:**



**Input Type: time**

The **<input type="time">** allows the user to select a time (no time zone).

Depending on browser support, a time picker can show up in the input field.

**Lab 9X**

<form>  
  Select a time:  
  <input type="time" name="usr\_time">  
</form>

The HTML View below

****

**Input Type: datetime**

The **<input type="datetime">** allows the user to select a date and time (with time zone).

**Lab 9Z**

<form>  
  Birthday (date and time):  
  <input type="datetime" name="bdaytime">  
</form>

|  |  |
| --- | --- |
|  | The input type datetime is removed from the HTML standard. Use datetime-local instead. |

The HTML View below



**Input Type: datetime-local**

The **<input type="datetime-local">** allows the user to select a date and time (no time zone).

Depending on browser support, a date picker can show up in the input field.

**Lab 9AA**

<form>  
  Birthday (date and time):  
  <input type="datetime-local" name="bdaytime">  
</form>

**HTML View below:**



**Input Type: email**

The **<input type="email">** is used for input fields that should contain an e-mail address.

Depending on browser support, the e-mail address can be automatically validated when submitted.

Some smartphones recognize the email type, and adds ".com" to the keyboard to match email input.

**Lab 9BB**

<form>  
  E-mail:  
  <input type="email" name="email">  
</form>

**HTML View below:**



**Input Type: search**

The **<input type="search">** is used for search fields (a search field behaves like a regular text field).

**Lab 9CC**

<form>  
  Search Google:  
  <input type="search" name="googlesearch">  
</form>

HTML View below:



**Input Type: tel**

The **<input type="tel">** is used for input fields that should contain a telephone number.

The tel type is currently supported only in Safari 8.

**Lab 9DD**

<form>  
  Telephone:  
  <input type="tel" name="usrtel">  
</form>

**HTML View below:**



**Input Type: url**

The **<input type="url">** is used for input fields that should contain a URL address.

Depending on browser support, the url field can be automatically validated when submitted

Some smartphones recognize the url type, and adds ".com" to the keyboard to match url input.

**Lab 9 EE**

<form>  
  Add your homepage:  
  <input type="url" name="homepage">  
</form>

**HTML View below:**



**HTML Input Attribute**

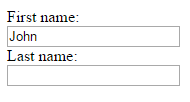
**The value Attribute**

The **value** attribute specifies the initial value for an input field:

**Lab 9 FF**

<form action="">  
First name:<br>  
<input type="text" name="firstname" value="John">  
<br>  
Last name:<br>  
<input type="text" name="lastname">  
</form>

**HTML View below:**

****

**The readonly Attribute**

The **readonly** attribute specifies that the input field is read only (cannot be changed):

**Lab 9 GG**

<form action="">  
First name:<br>  
<input type="text" name="firstname" value="John" readonly>  
<br>  
Last name:<br>  
<input type="text" name="lastname">  
</form>

The readonly attribute does not need a value. It is the same as writing readonly="readonly".

**The disabled Attribute**

The **disabled** attribute specifies that the input field is disabled.

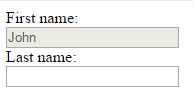
A disabled element is un-usable and un-clickable.

Disabled elements will not be submitted.

**Lab 9 HH**

<form action="">  
First name:<br>  
<input type="text" name="firstname" value="John" disabled>  
<br>  
Last name:<br>  
<input type="text" name="lastname">  
</form>

The disabled attribute does not need a value. It is the same as writing disabled="disabled".

****

**The size Attribute**

The **size** attribute specifies the size (in characters) for the input field:

**Lab 9 HH**

<form action="">  
First name:<br>  
<input type="text" name="firstname" value="John" size="40">  
<br>  
Last name:<br>  
<input type="text" name="lastname">  
</form>

****

**The maxlength Attribute**

The **maxlength** attribute specifies the maximum allowed length for the input field:

**Lab 9 II**

<form action="">  
First name:<br>  
<input type="text" name="firstname" maxlength="10">  
<br>  
Last name:<br>  
<input type="text" name="lastname">  
</form>

With a maxlength attribute, the input control will not accept more than the allowed number of characters.

The attribute does not provide any feedback. If you want to alert the user, you must write JavaScript code.

Input restrictions are not foolproof. JavaScript provides many ways to add illegal input.

To safely restrict input, restrictions must be checked by the receiver (the server) as well.